

ABSTRACT OF THE DISCLOSURE

Communication over lossy packet networks such as the Internet is hampered by limited bandwidth and packet loss. The present invention provides a path diversity transmission system for improving the quality of communication over a lossy packet network. The path diversity transmission system explicitly sends different subsets of packets over different paths, thereby enabling the end-to-end application to effectively see an average path behavior. Generally, seeing this average path behavior provides better performance than seeing the behavior of any individual random path. For example, the probability that all of the multiple paths are simultaneously congested is much less than the probability that a single path is congested. The resulting path diversity can provide a number of benefits, including enabling real-time multimedia communication and simplifying system design (e.g., error correction system design). Two exemplary architectures for achieving path diversity are described herein. The first architecture is based on source routing, and the second architecture is based on a relay infrastructure. The second architecture routes traffic through semi-intelligent nodes at strategic locations in the Internet, thereby providing a service of improved reliability while leveraging the infrastructure of the Internet.